DOCUMENT RESUME

ED 264 782 HE 018 958

AUTHOR Roberts, David
TITLE Approaches to Learning: An Institutional Study. Division of External Studies. Occasional Papers No. 5.
INSTITUTION Riverina-Murray Inst. of Higher Education, Wagga Wagga (Australia).
REPORT NO ISBN-0-909561-79-6
PUB DATE Sep 85
NOTE 61p.
AVAILABLE FROM Riverina-Murray Institute of Higher Education, P.O. Box 789, Albury, New South Wales 2640, Australia.
PUB TYPE Collected Works - Serials (022) -- Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Data Collection; *Distance Education; Extension Education; Foreign Countries; Institutional Research; Learning Activities; Postsecondary Education; *Program Evaluation; Program Implementation; Questionnaires; *Student Attitudes; *Study Habits; *Teleconferencing
IDENTIFIERS *Riverina Murray Inst of Higher Educ (Australia)

ABSTRACT

Distance education at Riverina-Murray Institute of Higher Education (RMIHE) in Australia is addressed in two papers by David Roberts. The first paper, "Approaches to Learning: An Institutional Study," discusses the results of 1984 questionnaires and diaries completed by RMIHE distance education students. Information was sought on how students approached learning from the study materials. Data are presented on such matters as the time students spent studying, how they timetable their study times, and the kinds of emphasis students place on their various learning activities. It is concluded that at RMIHE there is a mismatch between institutional and student expectations about learning approaches. The second paper, "Teleconferencing at Riverina-Murray Institute: Evaluation of a Pilot Study," considers the institute's first serious attempt to develop two-way communication with external students using teleconferencing. A timetable of events for planning and organizing the teleconferencing procedure is presented, along with information on six procedures for gathering data: observations, lecturer diaries, lecturer interviews, student questionnaires, student interviews, and audiocassette analysis. Data analysis is also discussed, and questionnaire and forms are included. (SW)

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APPROACHES TO LEARNING - AN INSTITUTIONAL STUDY

by Staff of Riverina-Murray Institute

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OCCASIONAL PAPERS - NUMBER FIVE

September 1985

National Library of Australia

Cataloguing-in-Publication Data:

Roberts, David, 1940-

Approaches to Learning - An Institutional Study

Bibliography

ISBN 0 909561 79 6

1. Study, Method of. 2. University extension - New South Wales - Wagga Wagga. 3. Distance education - New South Wales - Wagga Wagga. I. Riverina-Murray Institute of Higher Education. Division of External Studies. II. Title. (Series: Occasional papers (Riverina-Murray Institute of Higher Education, Division of External Studies); no 5).

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EDITORIAL COMMENT

In keeping with previous issues of Occasional Papers this edition is short and hopefully sweet. In fact, it consists of only two papers.

We all spend a great deal of our time preparing and developing packages for our external students but spend very little time trying to find out what students actually do with the materials we have toiled so long to produce. For example, how much time does the average student spend studying? Do students set themselves study timetables? How much of their time and energy do they give to additional reading, the writing of assignments or studying for examinations?

Like most attempts at research you may feel that the first paper raises more questions than it answers. There is no harm in that. If the paper encourages you to think again about the external students you are responsible for then something valuable has been achieved.

The full report is 160 pages long and obviously contains considerable detail and discussion that could not be included in the very condensed version that appears here. However, if anyone would like to follow up any matters arising out of the paper I would be only too happy to respond as best I can.

The second paper is an evaluation of RMIHE's first serious attempt to develop two-way communication with external students through the medium of teleconferencing. Several other Australian tertiary institutions are experimenting in this area while others have already accepted teleconferencing as a valid teaching strategy. Teleconferencing's greatest drawback is cost. As with so many other approaches to learning the problem is trying to determine cost-benefit.

I hope you find this edition interesting.

DAVID ROBERTS
EDITOR

APPROACHES TO LEARNING - AN INSTITUTIONAL STUDY

by David Roberts, BA, MEd, GradDipDistEd

Abstract

During 1984 a questionnaire and diary were mailed to a sample of 300 distance education students studying with the Riverina-Murray Institute of Higher Education to discover more about how students approached the task of learning from their study materials. The hypothesis to be tested was, "There is no significant difference between the RMIHE's expectations of external student approaches to learning and the approaches to learning the external students report using."

Data are presented relating to such matters as the time students spend studying, how they timetable their study times and the kinds of emphasis students place upon their various learning activities.

It is concluded that at RMIHE there is a mismatch between institutional expectations and student expectations about approaches to learning. Some implications of this finding are briefly discussed.

Introduction

The Division of External Studies at Riverina-Murray Institute of Higher Education (formerly Riverina College of Advanced Education) endeavours, like most other tertiary institutions, to advise its external students about ways and means of studying effectively. Such advice is offered at RMIHE in the hope that it may be one part of a multi-pronged attack on the high attrition rates that appear to be symptomatic of all distance education institutions. However, the fact that the RMIHE, and other tertiary institutions, advise their students about study techniques raises a number of interesting issues. For example,

> Are institutions offering the best advice?
> How do we know it is the best advice?
> What do we already know about the study timetables that distance education students currently use?
> Can students be treated as a homogeneous group with regard to study methods?
> How do students use their learning materials?
> Are expectations of student workloads similar to those held by the students?

This present study attempts to provide some base-line data about the students of the RMIHE in relation to the above issues. The study took as its starting point the hypothesis that:

> There is no significant difference between Institute expectations of external student approaches to learning and the approaches to learning the external students report using.

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This major hypothesis is in turn made up of three sub-hypotheses.

(1) The Institute's expectation of the average amount of time a student spends studying each week is no different to the average amount of time students report spending on study each week.

(2) There is no significant difference between the study timetable advocated by the Institute as the recommended way to approach learning and the study timetables external students report using.

(3) The Institute's expectations of the work students do (ie, reading set texts, recommended readings, studying the specially prepared Book of Readings, completing self-assessment activities, attending compulsory residential schools, submitting assignments and sitting examinations) is no different to the work the students report doing in practice.

REVIEW OF THE LITERATURE

The three sub-hypotheses above are essentially concerned with these three questions:

(1) How much time do external students spend studying?

(2) How do external students timetable their time for study?

(3) What do students do during their study time?

This section briefly reviews the findings of other researchers in relation to these three questions.

(1) How much time do external students spend studying?

It appears that many tertiary institutions are not too sure how much time students devote to study. Bååth (1976) asked 34 European Institutions, "Do you know anything about the average study time of your students per study unit?" The responses were:

Yes, rather well	9
Some basis for guessing	15
No, hardly	9
No answer	1

In a later study Bååth (1982) investigated the actual study time for five subjects offered externally at the University of Lund. As table one shows, he found that there was an enormous variation in actual study time between and within subjects.

Course	M	SD	Extreme Values Lowest	Highest	N
Y.E.S. 1 (Sweden)	76	78	10	360	64
Y.E.S. 1 (Norway)	54	50	1	530	99
Psychology, General Course	58	34	14	300	71
Psychology of Management	25	20	2	96	91
Physics, Elementary Course	60	43	11	220	59

Table 1. Net Study time (hours) per course (Bååth, 1982)

Schwittman (1982) conducted some research at Funkkollegs in Germany and concluded that the average study time, as stated by students, did not correspond with the study time recommended. In fact, only 12% of students spent the recommended study time on their studies. A number of other studies support the belief that there is an immense range in the amount of time students devote to their studies but that on average students spend less time studying than the time recommended by the tertiary institution. (Tesarcwski, 1982, Boundoncle 1979, Clyde et al 1983, Burt 1977). Lack of study time has of course been shown to be the major cause of student withdrawal by a number of writers. (Sheath 1964, Hartsell 1964, James and Wedemeyer 1960, Sloan 1965, Butterfield and Kane 1969, Jones and Wylie 1970 and Roberts 1980). On the other hand there is some evidence emerging to suggest that the single most important determinant of how much is learned is total study time. The greater the time spent studying - the better the results. (Bugelski and Rickwood 1963, Cooper and Partle 1967, King 1974 and Peruniak, 1983).

To date, research into the amount of time external students spend studying can be summarised as follows:-

- "Lack of time" is the most commonly reported main reason for attrition.
- Students vary enormously in the time they devote to their studies.
- Generally students appear to spend less time on their studies than their institutions recommend.
- Usually, the greater the time spent "on task" the greater the learning.

(2) How do external students timetable their time for study?

Literature pertaining to how students actually timetable their study or indeed whether they timetable themselves at all is virtually non-existent. Yet, most tertiary institutions recommend that their students organise their week into pre-set times that they can devote to study. Where is the empirical evidence to support such advice? Indeed, have

external students even been asked whether they plan and observe timetables? Perhaps timetabling is presumed to be advantageous because students when at school were conditioned to think and work at pre-specified times? The literature is strangely silent on the whole matter apart from the many "guides to study" type booklets that implore new external students to organise their week according to a timetable. A study by Kaye (1972) suggested that, contrary to the advice given, Open University students do not set aside a fixed amount of time for study. Fritsch (1984) reports that the experience at Fernuniversitat is that although timetabling is recommended to students it is only as good as the students' ability to use it flexibly. This seems almost a contradiction in terms. Clyde et al (1983) reached the following tentative conclusions regarding study patterns of students at James Cook University, Queensland, but the sample was unfortunately limited to only 21 students.

- Times during the day used for studying do not seem to follow a regular overall pattern. All students utilised the evenings, usually for a substantial time; while in addition, many students studied for shorter periods scattered throughout the day,

- It would appear that mid-week days are most popular for study,

- Most students seem to spend around 1½ - 2 hours per study session,

- Only a small minority of students show any consistent pattern of study on either a daily or weekly basis. (Clyde et al, 1983)

Another study by Heinze (1983) agrees in most respects with the findings of Clyde et al. Using an interview technique a group of researchers investigated the environment of distance students with reference to the problems caused by study plus work. Heinze found that most students work at night but that many find they cannot work when tired for more than an hour and have to catch up at weekends. Hardly a single student had a fixed timetable and study habits varied enormously. (Heinze 1983).

There is some evidence that students change their study commitments according to the timing of assignments and examinations. Peruniak (1983), for example, found when comparing "completers" with "withdrawers" that the "completers" synchronized their study times with the examination process so that they "peaked" in time and effort the week of the examination. No such change occured with the "withdrawers" (Peruniak, 1983). Work carried out by Berrigan (1977) at the Open University (U.K.) also supports the view that intensive work occurs around assignment cut-off dates often with a subsequent "lag" before continuation of study. This again suggests that few students observe a set timetabled study routine. (Berrigan, 1977).

What we know about how external students timetable their study can be summarised as follows:-

- The meagre evidence available suggests students do not observe fixed timetables,

- Most tertiary institutions urge their external students to establish and observe study timetables.

(3) What do students do during their study time?

RMIHE, along with most tertiary institutions, provides a degree of guidance and direction to its external students with regard to what learning activities they should undertake. In many cases a study guide is despatched which divides the semester up into weeks together with suggested readings activities and assignments to be completed. To what extent do the students observe such guidelines? Is there a mis-match between the expectations of the teaching institution with regard to what students should be doing and what students do in practice?

In a recent study Parer and Morgan (1984) indicated there are important variations in the way students approach their assignments. Based upon diaries used with Gippsland I.A.E. external students they claim that there are essentially two ways students approach their assignments. The "assessment blind" students appear unaware of the influence assignments should have upon their learning. "Assessment conscious" students, on the other hand are goal-oriented. They see assignments as the primary focus and can "churn them out" with alacrity. (Parer and Morgan, 1984). Clyde et al's study (1983) of student study patterns also included a diary that sought to discover how much time was spent on assessment activities. Nine out of ten students devoted most of their time to assignments. The two students who recorded the shortest time spent studying did virtually nothing else apart from assignment work. A similar tendency by some students to spend the majority of their time on assignments has been reported by Heinze. (Heinze, 1983).

Clyde et al, (1983) also examined the type of reading done by students. Every student read his/her module material and 88% read the textbooks and the readings supplied as an integral part of the subject. Very few students, however, did any additional reading. Bulkeley (1981) and Fritsch (1984) also confirm that tertiary students do little or no reading outside their actual course readings.

With regard to self-assessment questions Duchastel and Whitehead (1980) have reported from a small survey of Open University students that students probably do not use S.A.Q.s in the way that they are intended to be used. Referral to S.A.Q.s ranged from "never" to "always". Some students also used the S.A.Q.s at the end of the subject as a framework for revision. (Duchastel and Whitehead, 1980). A more comprehensive study of how students enrolled in the subject

E200 (Open University) used S.A.Q.s has been described by Lockwood (1983). His work showed that the great majority of students read the S.A.Q.s and think about them briefly before reading the follow-up comment and that 80% or more of the students were finding the S.A.Q.s "fairly" or "very helpful". Another study by Castro (1983) of Deakin University students found that all respondents valued the reinforcement role of S.A.Q.s and made an effort to do as many as they could.

Peruniak (1983) has compared "completers" and "withdrawers" in the time they devoted to study as an examination approached, was completed and the results arrived. "The completers" steadily increased their study commitment as the examination approached, then relaxed after the examination before picking up again when the results arrived. The "withdrawers", on the other hand, appeared to be on skid-row from the time they submitted an examination request.

Brew's (1978) research into how external students at the University of Essex studied their units also produced some useful results. Brew was able to categorise his sample of 71 students into six groups. (Table 2). The important point to note is the great variety displayed by these students in the way they went about studying. (Brew, 1978).

	No.	%
1. Read straight through it just once	4	5.6
2. Read through and make notes	6	8.5
3. Read through trying S.A.Q.s	16	22.5
4. Read through making notes and trying S.A.Q.s	13	18.3
5. Read once and then through again more carefully to go over points.	23	32.4
6. Look at objectives, preface, summary, etc. trying to find out what to learn first.	8	11.3
TOTAL: All respondents	71	100.0

Table 2. How University of Essex students studied the Units. (Brew, 1978).

A number of writers have recognised that the emphasis that external students give to various learning activities is closely related to their study orientation. In other words,

how students use their study time is a function of a number of complex factors including student personality, age, purpose for studying and role perception. Taylor, Gibbs and Morgan (1980) refer to four different orientations : vocational, academic, personal and social. Marton and Saljo (1976) have drawn a distinction between deep-level and surface-level approaches to learning. Pask (1976) found that some students used what he termed a "holistic" strategy. In this approach the student attempted to fit the subject matter into his/her real life situation. The student showed interest in what was personally relevant. In the "serialist" strategy used by other students there seemed to be an attempt to create understanding out of the component details, the logical steps and tasks taken in a strictly linear sequence. D.J. Bowlay (1979) has conducted research into the reasons why students enrol in distance education. Bowlay divided all students essentially into 'pleasure-oriented' and 'profit-oriented' at the time of initial enrolment. He defined the two groups as follows:-

> "...those concerned with self development, intellectual activity, curiosity, constructive use of leisure - in general, personal reasons unrelated to job or career needs. (The 'pleasure' aspect)
>
> those concerned with anticipated gains by way of profit, status, qualifications in relation to present or future career plans - in general, instrumental reasons related closely to job or career. (The 'profit' aspect)"

Mathias (1980) has reported on some longitudinal research at the University of Birmingham (U.K.) where he identified two different approaches to study that he termed course-focussed (CF) and interest-focussed (IF). Within the CF approach the emphasis was upon competence as the basis for interest. If a student did well at a learning task he/she liked it and became interested. On the other hand students displaying an IF approach seemed to derive competence primarily from interest. These students became highly competent in areas they found interesting and tended to de-emphasise others. Another researcher, Goodyear (1975) concluded that he was able to divide student orientation to study at the Open University into two broad groupings: "qualification" and "compensation". Qualification is where the reason for studying is "Obtaining a specific qualification in order to achieve some promotion at work", whereas compensation is where students are "...searching for something to compensate for inadequacies in one's existing life." Hudson (1970) has reported upon two types of students, "the sylbs" who are syllabus bound and "the sylfs" who are syllabus free. Whether a student is a "sylb" or a "sylf" appears to be related to the experience and self-confidence of the learner.

An extensive examination of students' study orientations has also been conducted by Marland et al (1983) using "stimulated recall" methods. Four important aspects of study orientation have been reported by this team of researchers:-

- Study orientations are dynamic not static. There is a steady refinement of the study orientation adopted by students.
- There is a high level of congruence between how students say they study and how they actually study.
- Students use their study orientations to direct their learning behaviour although they modify their approach as a result of feedback.
- Two types of study orientation were recognised (X and Y), which are a function of student motivation, study strategy and student role perception.

By way of summary the following points can be made about how external students use their study time.

1. There is a substantial and growing body of evidence to suggest that how a student divides up his study time is dependent upon the students' study orientation,
2. Few students appear to do more than the prescribed reading,
3. Emphasis given to the time needed to complete assessable work varies very considerably,
4. Most students make use of S.A.Q.s although less than half respond in the manner suggested to them,
5. Little is known about how distance education students actually use the learning materials provided.

METHODOLOGY

The following areas are outlined in this section:

1. Survey Instruments
2. The sample
3. Survey procedure and response rate.

Survey Instruments

Two instruments, a questionnaire and a student diary, were designed to gather the required data. The diary asked students to record when and what they studied during weeks three and four of semester (14 days). A sheet accompanied the diary explaining how students should use the diary and listing the various learning activities they were most likely to be engaged in. Students

had to use the coding system for this list in making their diary entries. The list of learning activities, identical to that used in the questionnaire, was as follows:-

Instructions for completing your DIARY

Please place one of the following letters on your diary for every half-hour of study you complete.

LEARNING ACTIVITIES

A Reading your Subject Outline or Notes.

B Working through self-assessment questions, activities or exercises that have been included in your notes by the lecturer but are not to be submitted for assessment.

C Work specifically being carried out to enable you to complete an assignment for assessment. (eg. selected reading, note-taking, writing the assignment etc.)

D General reading of your set textbook(s).

E General reading of your "Book of Readings".

F Additional "recommended reading" not covered by D and E above.

G Revising work in preparation for formal examinations or mid-semester tests.

H Preparing for, and attending residential school (including time travelling there and back).

O Any other "study" activity not mentioned above (eg. listening to audio-tapes). Please specify what kind of activity below:-

Data gathered from the diary could be used also to cross-check with data collected from the questionnaire.

The questionnaire was trialled with six students in May, 1984. A modified, final questionnaire consisting of 18 items and taking less than 20 minutes to complete was eventually despatched by mail in July, 1984. Most of the 18 items were of the "closed" multiple-choice type requiring respondents to tick the category that best represented their own situation.

Copies of both survey instruments are available for interested persons in the detailed report of the project.

The Sample

On the day the sample was selected (July 25th, 1984) computerised

records showed the population of external students enrolled in Spring Semester 1984 who were also enrolled as external students in Autumn Semester 1984, to be 2,742. It was essential that the sample include students enrolled in both semesters because most of the items in the questionnaire sought answers to questions about the previous semester.

The size of the sample (300 students) was constrained by finance, time and the lack of assistance available to the writer in collating and analysing the data. No funds were available and all expenses (typing, printing, postage etc.) had to be met by the researcher. The 300 students who finally made up the sample were selected using a random sampling table. 300 students represented approximately 11% of the total population. Typically the population consisted of "mature-age" students, that is, students over the age of 21. In most cases the students were in full-time employment and the majority were married with families. No attempt was made to stratify the sample by age, sex or programme. However, an analysis of the respondents later showed that the sample was in fact a good representation of the total population with regard to both age and gender.

Survey Procedure and Response rate

The 1984 Spring Semester for RMIHE external students officially commenced on Monday 30th July. Materials for all the subjects were despatched to students the week before (i.e. July 23rd - July 27th).

Week three of the semester, the time when the students in the sample should start to fill in their diaries, began on August 13th (Monday). The diary, questionnaire and covering letter were mailed to students on Friday, August 3rd, allowing Australia Post ten days to deliver. Included with the questionnaire and diary was a stamped/addressed envelope for students to use when returning their completed responses. Follow-up letters were despatched to all non-respondents on Tuesday, September 4th.

The response rate was disappointing being just under 45%. It is difficult to understand why the response was not better especially since considerable care was taken to make the whole process as "user-friendly" as possible. As a result of the poor response rate the validity of the data and consequent interpretations are, unfortunately, somewhat questionable.

RESULTS

The diaries and questionnaires were collated in September/October 1984. Because of the need for brevity only the more signifcant results are reported here. (The full research study amounts to over 160 pages).

How much time do external students spend studying?

130 students responded to the questionnaire item asking for an

estimate of the average number of hours spent studying last semester. (Figure 1)

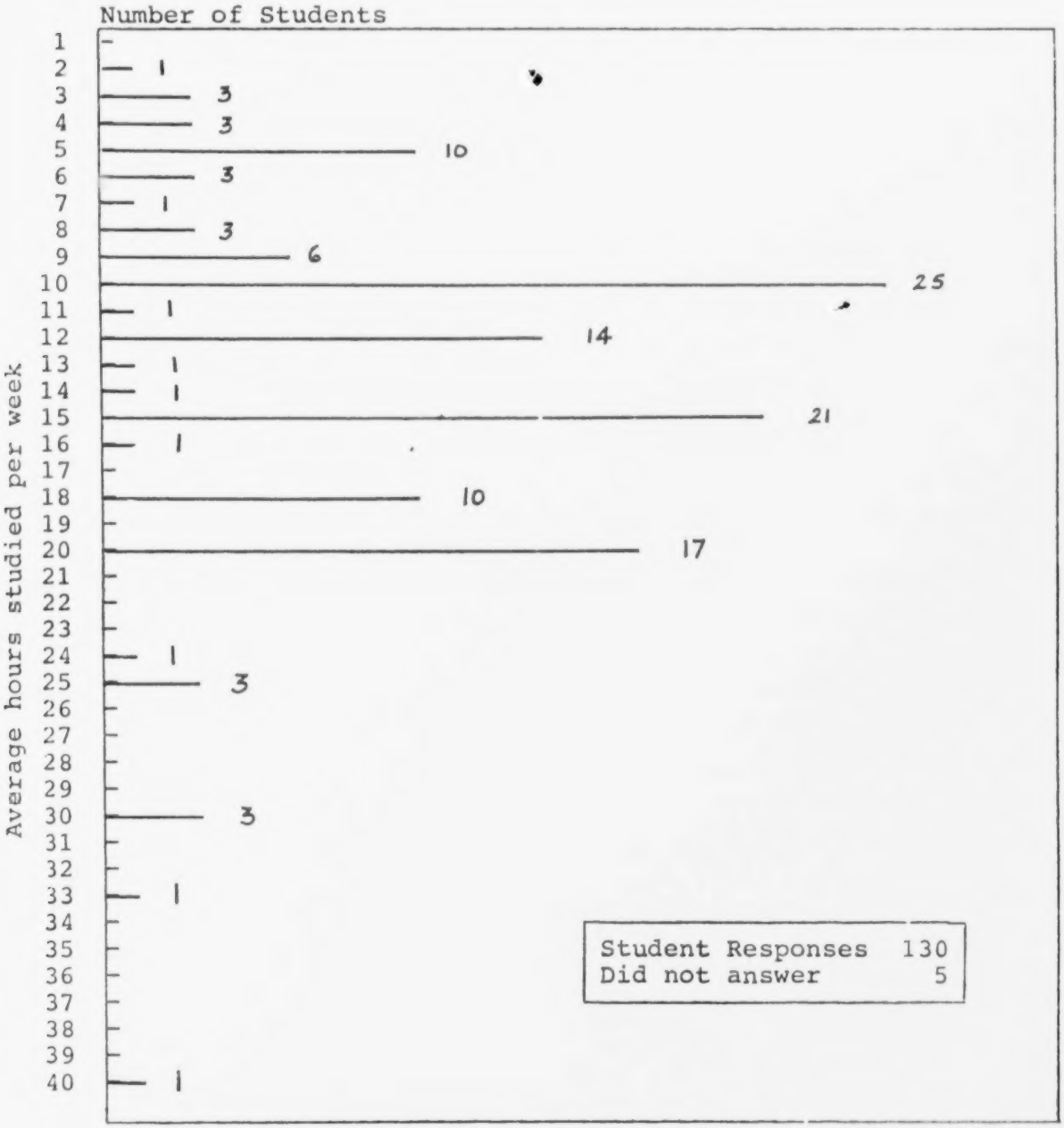


Figure 1. Average number of hours studied each week. (Estimate)

Figure 1 shows a huge range in the time spent studying. However, this data needs to be treated with caution because there is also a great range in the number of unit points students are attempting. In order to procure more valid data regarding hours spent studying the students attempting six unit points (the largest group) were examined as a single group. The result, shown in figure 2 below, shows an enormous range from two students who claimed to spend only two hours per week at their studies to three

students who claimed they toiled for an average of 20 hours per week. Perhaps more surprising is the fact that the number of hours spent studying did not correlate with the results achieved. Three of the 31 students who attempted six unit points failed a subject. Two of these claimed they studied 10 hours per week while the third did not state the number of hours. Amazingly, the seven students who studied five hours or less all achieved passes.

The RMIHE recommendation is that six unit points should require approximately eighteen hours of study each week. The majority of students were able to manage however with considerably less. (Figure 2).

HOURS	Students	
1		
2	X X	
3	X X X	
4		
5	X X	
6		
7		
8		
9	X X X X X	
10	X X X ⊠ ⊠	⊠ Students who reported failing a course.
11		
12	X X	
13		
14		
15	X X X	
16		
17		
18	X X X X X	Recommended College work-time for six unit points.
19		
20	X X X	
Did not answer	X	
TOTAL	31	

Figure 2. Average hours of study per week - students attempting six unit points. (estimate)

To ascertain whether the hours actually worked by all the students in the sample were less than recommended (irrespective of unit points attempted) the questionnaires were individually checked. The results are shown in table 3 below.

Unit Points Attempted	College Rec.	No. of Students Doing More than College Recommends	Same as College Recommends	Less than College Recommends	TOTAL No. of Students
3	9	6	0	3	9
4	12	2	4	2	8
5	15	0	0	0	0
6	18	3	5	23	31
7	21	2	0	22	24
8	24	0	0	16	16
9	27	1	1	13	15
10	30	1	0	5	6
11	33	0	0	2	2
12	36	0	0	5	5
13	39	0	0	2	2
14	42	0	0	2	2
15	45	0	0	2	2
TOTALS		MORE 15 (12.3%)	SAME 10 (8.2%)	LESS 97 (79.5%)	122

(13 students did not answer this question)

Table 3. Number of hours actually worked compared with number of hours recommended by the College.

Almost 80% of students estimated they did less work than recommended. Of the 15 students (12.3%) who claimed they exceeded the recommended amount most had opted for light loads (i.e. 3 - 6 unit points).

A number of reasons for the fact that students do less than the recommended amount of study can be suggested. Firstly, the College academic staff may believe the set work is far more demanding for students than it really is. This may happen if academic staff perceptions and student perceptions of what is required vary. Academic staff perceptions, for example, may stress mastery of a set of concepts, the acquisition of a range of intellectual skills, a holistic, deep-level comprehension of the topics. On the other hand, many students may be quite happy to settle for a

superficial or surface knowledge of the subject; just enough to, "get them through". Secondly, there may be a disregard by academic staff of the work-load they should be setting. No obvious attempt is made, for example, to identify different work-loads according to whether a subject is offered at Associate Diploma or Graduate Diploma level or whether it is a first or final semester subject. It would seem that workload is very much a hit or miss affair. Seldom are subjects compared or checked to ascertain whether workloads are fair and equitable. Consequently two subjects with the same unit point value may differ enormously in demand upon student time. The final point that should be made is of a psychological kind and difficult to substantiate. It would seem to be a human trait that most people don't do more than is expected of them. If the College sets, therefore, an expectation that such and such a subject requires nine hours study per week most students will see this as the maximum rather than the minimum to be worked and will do up to nine hours. If the College expectation had been fifteen hours students might work up to this amount but not more.

The data presented so far concerning the number of hours students spend at their studies has been based upon estimates of average study time per week for the proceeding semester. Such data maybe somewhat inaccurate because it is not easy for a student to remember back a few months and estimate what his/her study commitments were. The diary data, however, avoids this problem, and represents a far more accurate record of the time spent studying. The diaries were only maintained however during weeks three and four of the semester. Whereas they provide excellent data for this fortnight it is difficult to know whether weeks three and four are "typical" of all sixteen semester weeks. This limitation needs to be kept in mind.

The diary data reinforces the information obtained from the questionnaire with regard to the enormous range in the amount of time students spend at their studies. Figure 3 depicts the average number of hours studied during weeks three and four of semester for the whole sample. Figure 4 shows the same information for those students who attempted only six unit points. Again it can be seen that most students are doing less than the amount of work recommended by the College. (Figure 4).

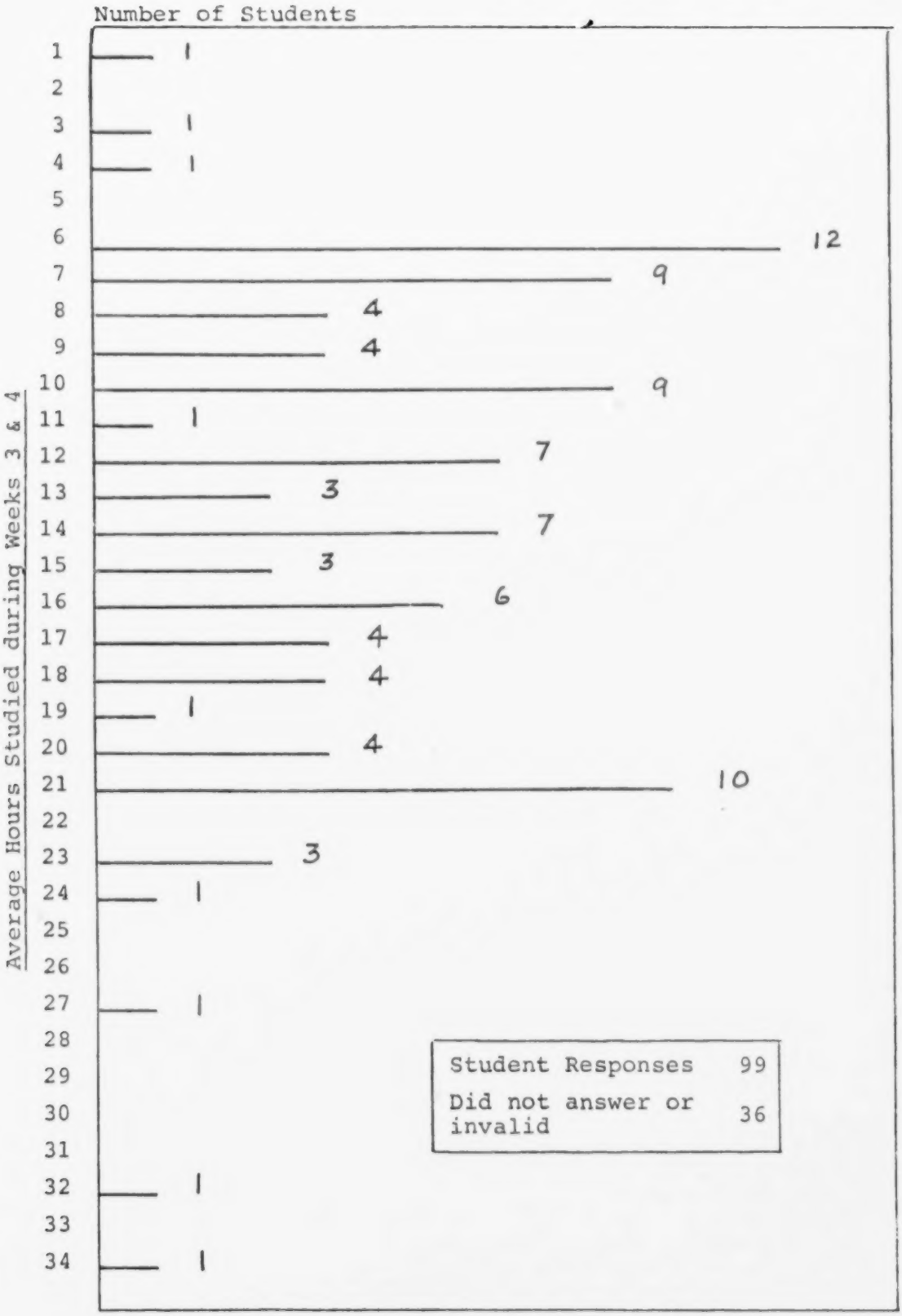


Figure 3. Average number of hours studied during weeks three and four of semester (diary).

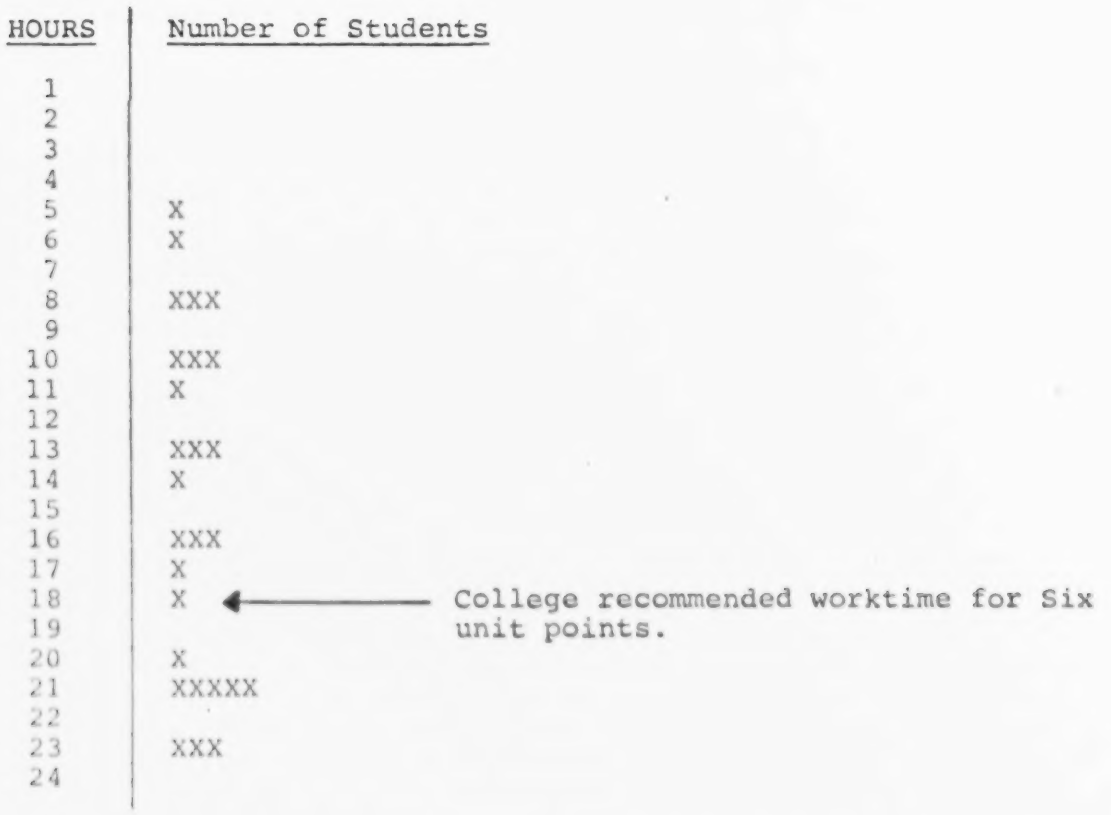


Figure 4. Average hours of study per week - students attempting six unit points. (diary)

The diary data was cross checked with the questionnaire data for the 86 students who returned both survey instruments and attempted approximately the same work-load each semester to determine compatability. The results (table 4) indicate that more than half the students estimated they worked longer hours than their diaries indicated. Whatever the reason for this it can only be interpreted as further evidence that there is a marked discrepancy between college recommendations of the number of hours of study students should attempt and what the students report doing in practice.

	No. of Students	% of Respondents
Estimate HIGHER than Diary recording	45	52.3
Estimate & Diary recording very similar	27	31.4
Estimate LESS than Diary recording.	14	16.3
TOTAL	86	100.0

Table 4. Comparison of estimated number of hours studied per week in the previous semester with hours studied in the current semester as recorded in student diaries. (Students undertaking similar work-loads both semesters.)

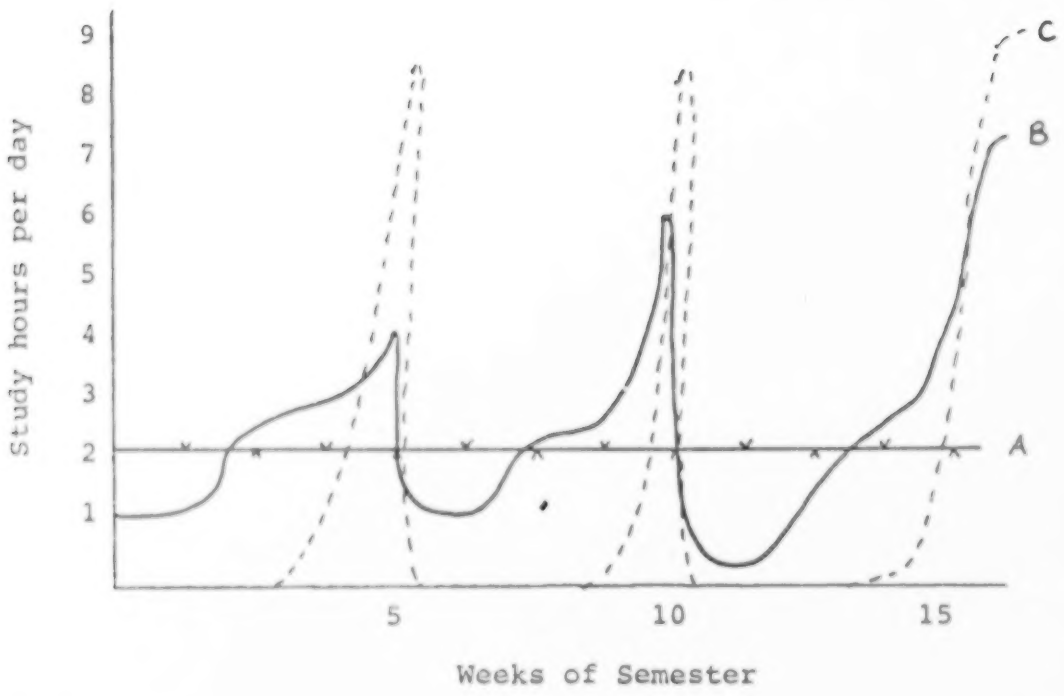
How do external students timetable their time for study?

It has already been stated in the review of the literature section that most tertiary institutions advise their students to organise their study time so that they have a regular, set timetable pattern to observe. It was also suggested that external students rarely if ever actually observe such a structured timetable. Items 9 and 10 of the questionnaire, together with the student diary, were designed specifically to throw light upon the various ways students set about timetabling at RMIHE. The results of item 9 are shown below. (Table 5).

Timetable Approach	No. of Students	% of Responses
A You spend a set amount of time most days throughout the semester on your study. For example, you may get up at 05.00 and study until 07.30 every day or perhaps you work regularly between 20.00 and 23.00 hours most nights.	27	20.6
B You try to observe a timetable approach to study as described above but find it often doesn't work out that way. You may miss a few days but then you "catch up" by spending extra time when assignments are due or exams looming.	62	47.3
C You don't work to any set timetable. Study times are somewhat spasmodic. You tend to work only when an assignment or exam are due.	27	20.6
D You don't fit into A, B or C above. In this case briefly explain below what you do....	15	11.5
Did not respond.	4	-
TOTAL	135	100.0

Table 5. Timetabling of Study.

A, B and C categories of table 5 represent three hypothetical approaches to timetabling, which, in pure form, would look something like this. (Figure 5).



A "The consistent type"

B "The intermediate type"

C "The pressure type"

Figure 5. Hypothetical approaches to study timetabling.

It is realised, of course, that it would be an extraordinary student who fitted any of the above patterns completely. Item 9 does, however, enable students to be classified broadly into the above three types.

26.6% of the sample considered they spent a set amount of time on most days at their studies and so may be classed as "consistent" types. The largest group (47.3%) tried to observe a timetable but to some extent responded to the pressures of assignments and examinations. This group has been named the "intermediate" type because they show signs of both consistency and responding to pressures. The third type (20.6%) appears to function only when under pressure to submit assignments or sit examinations. This "pressure" type follows a series of study peaks and troughs and is, at best a spasmodic worker.

The assumption is that students will achieve best results if they are type A and consistently follow a strictly timetabled routine. Most students seem to agree with this since 67.7% at least try to observe a timetable. In the next table results achieved are correlated with the type of study timetabling the students claim to have used to ascertain whether those that study most consistently were the most successful group. If the hypothesis is correct, Type A students should achieve the best results followed

by Type B with the poorest performers being Type C.

TYPE	Results (Weighted*)	No. of Subjects Attempted	Performance Factor
TYPE A (Consistent)	49	32	1.53
TYPE B (Intermediate)	98	64	1.53
TYPE C (Pressure)	49	33	1.48

Table 6. Study Timetable type correlated with results achieved.

* The result for each subject attempted was weighted as follows.

Grade	Weighting
Grade A (Distinction)	+3
Grade B (Credit)	+2
Grade P (Pass)	+1
Grade F (Fail)	-1

The performance factor was calculated by dividing the results (weighted) by the number of subjects attempted.

Table 6 shows there is no indication that results achieved are related to the method of timetabling study times.

Item 10 sought to discover whether there is a discrepancy between the way students actually timetable their study times (as shown in table 5) and the way they would ideally like to timetable their study times. Table 7 shows the preference for type A (consistent) is very marked, although a significant number of students still selected type B (intermediate). Not one student opted for type C (pressure).

TYPE	NO. OF STUDENTS	% OF RESPONSES
Type A (Consistent)	89	68.5
Type B (Intermediate)	35	26.9
Type C (Pressure)	0	0
Type D (Other)	6	4.6
Did not respond	5	-
TOTAL	135	100.0

Table 7. Type of study timetable students believe would be most effective for learning.

Clearly almost every student (95.4%) believed that some consistency in the way he/she approached study was important yet many admitted to not being able to achieve this.

The diaries of course supplied a wealth of data with regard to when students studied and for how long.

It was possible to categorise the diary entries into the following "types" (Table 8) according to when study was undertaken.

Study Pattern - "Types"	No. of Students	% of Responses
Study at any time - no pattern at all	52	41.9
Weekday evenings/Weekend days only (6 pm - 1 am)	29	23.3
Weekdays/Weekend days but no evenings at all	14	11.2
Weekday evenings/Weekend evenings but no days. (6 pm - 1 am)	11	8.8
Weekday evenings only (6 pm - 1 am)	9	7.2
Weekday, daytime only	4	3.2
Weekday daytime and Weekday evenings only	4	3.2
Early mornings only (weekdays) 5 am - 9 am	1	0.8
Weekends only	0	-
Did not respond	11	-
TOTAL	124	99.6

Table 8. Student study-pattern "types" (Diary)

Despite the fact that the diary was kept for only 14 days some interesting information about study-patterns was forthcoming. 41.9% had no study-pattern at all and appeared to study when they felt like it or when time permitted. The remainder of the students observed reasonably clear-cut times for studying (e.g. weekday evenings only) but seemed to have times when they either couldn't or wouldn't study. Many students avoided study on Saturdays but worked on Sundays. Seven students often worked early in the morning although only one student completed all his work before 8.45 a.m. each day. Two students were "lunch-time" readers. Two others obviously read when going to and from work. By far the most common study pattern, apart from the "study at anytime group", was however the student who studied weekday evenings and weekend days (23.3%).

Instructional designers and lecturers are concerned about dividing external study packages into consumable pieces, for example, what might constitute a single work session. It is of value, therefore, to use the diaries to ascertain how much time students spent in continuous work sessions. The findings are presented below as Figure 6.

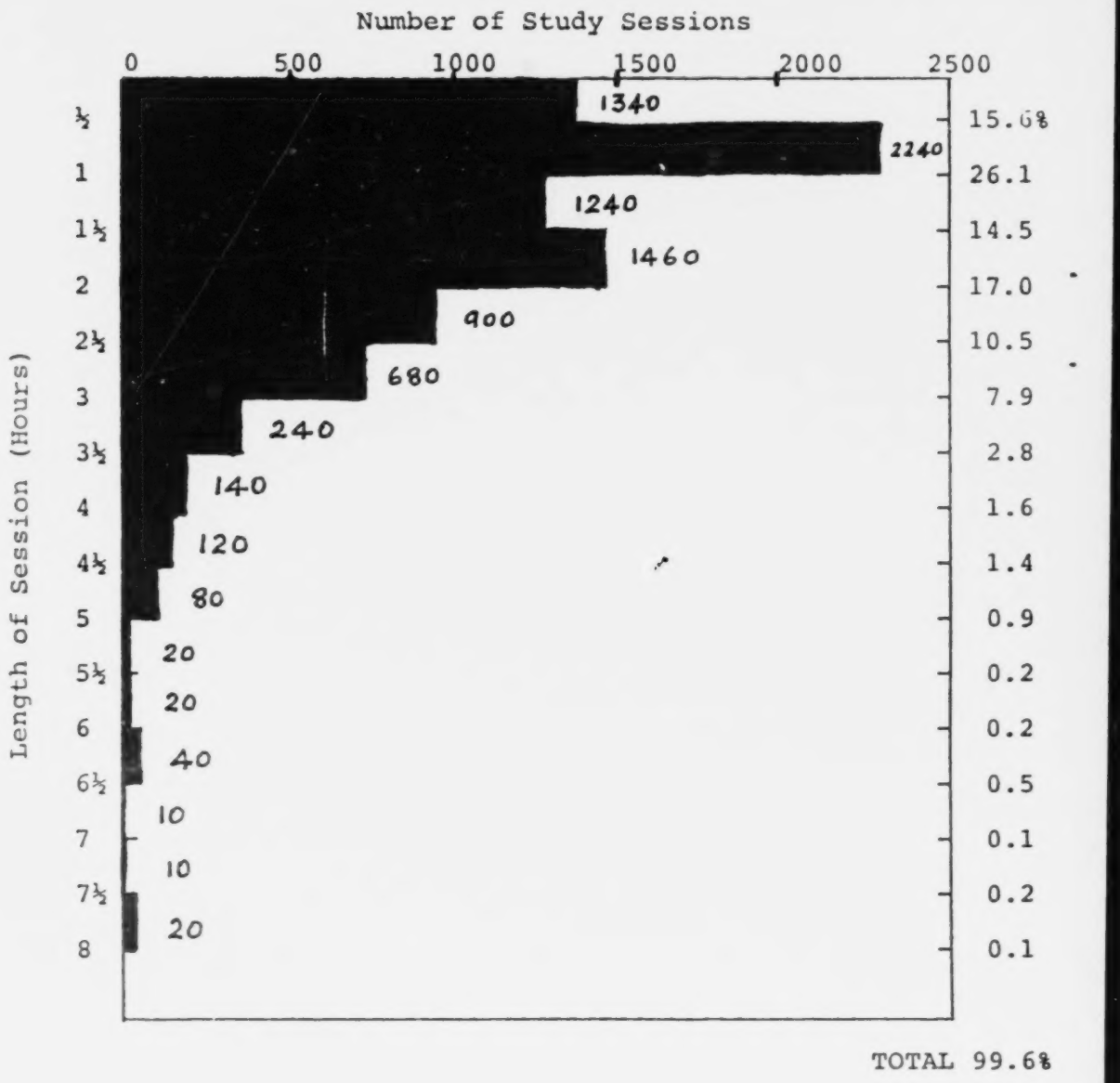


Figure 6. Length of study-sessions.

An interesting feature that became clear as this data was collected was that generally the lighter the workload attempted the shorter the length of the study-sessions. Students seemed to have a similar number of study sessions however - irrespective of workload.

91.6% of all study sessions lasted less than three hours. Of those sessions that exceeded three hours the great majority were long sessions during which students were completing assignments for submission. It would seem that if wishing to divide packages up into study sessions two hours would be a reasonable length of time for each session.

Item 9 explored three hypothetically distinct approaches to time-tabling called the "consistent" type, the "intermediate" type and the "pressure" type. Even though these types are, it is hypothesised, more readily recognizable over an entire semester, there

is value in trying to identify tendencies towards these three types during the two weeks of diary records. The results are shown below as table 9.

Type	No. of Students	% of Respondents
The "Consistent" Type	66	53.7
The "Intermediate" Type	40	32.5
The "Pressure" Type	17	13.8
Did not respond	12	-
TOTAL	135	100.0

Table 9. Approach-to-study types based on two weeks of diary data.

Because the diary records were maintained during the early weeks of semester a number of students had not, at this stage, had to submit any assignments. Consequently, some of the students who appeared during weeks three and four to be "consistent" type workers may have shown an increased study commitment a little later in the semester as assignments became due thereby becoming "intermediate" types.

The proportion of students according to the diaries who fell into the category of the "consistent" type was higher than expected (53.7%). It is worth noting that most of this group were "consistent" in that they completed about the same amount of work each day but were inconsistent in that many undertook the work at different times on different days. The "pressure" type was not common (13.8%) and was easily detected from the diary records.

Each student's diary was also cross-checked with the responses he/she gave to item 9. High congruence between item 9 and diary records was apparent in only 39% of cases. Some, but by no means complete agreement, was found in a further 38.2% of cases. This evidence suggests two possible interpretations. One, is that students found the responses offered them in item 9 rather confusing and misleading and therefore did not answer correctly. Two, there is a very real difference between what students THINK they do, and what students ACTUALLY do, by way of study. It may be that both factors are operating and that the discrepancy is a product of both.

What do students do during their study-time?

Questionnaire item 6 asked students to indicate what percentage of their study time they spent on each of nine learning activities. From this data it was possible to determine the learning activity that the students reported spending most time doing (table 10)

Learning Activity	Number of Students	Percentage of Responses
Reading your Subject Outline or Notes	14	10.4
Working through self-assessment questions, activities or exercises that were included in your notes by the lecturer but were not to be submitted for assessment.	6	4.4
Working specifically on assignments for submission. (eg. finding sources, selected reading, note-taking, writing of the assignment etc.)	66	48.8
General reading of your set textbook(s)	24	17.8
General reading of your Books of Readings	10	7.4
Additional "recommended reading".	2	1.5
Revising for tests or examinations.	4	3.0
Preparing for and attending residential school (including travelling time).	4	3.0
Any other "study" activity not mentioned above. (eg. listening to audio-tapes, Fieldwork, etc.)	0	0.0
Did not respond	5	3.7
TOTAL	135	100.0

Table 10. The learning activity that students reported spending most time doing.

Table 10 shows that almost half the students gave more time to writing and preparing assignments than any other activity. This is also supported by the data from the student diaries where it was possible to calculate the time spent on each learning activity for the entire sample (Table 11). Quite clearly the completion of assignments for submission demanded more attention than any other learning activity during weeks three and four.

Learning Activity	No. of HOURS	% of STUDY TIME
A Reading your Subject Outline or Notes	482	13.2
B Working through self-assessment questions, activities or exercises that were included in your notes by the lecturer but were not to be submitted for assessment.	416	11.4
C Working specifically on assignments for submission. (e.g. finding sources selected reading, note-taking, writing of the assignment etc.)	1406	38.5
D General reading of your set textbook(s)	750	20.5
E General reading of your Books of Readings.	316	8.6
F Additional "recommended reading".	90	2.4
G Revising for tests or examinations.	6	0.1
H Preparing for and attending residential school (including travelling time).	8	0.2
O Any other "study" activity not mentioned above. (eg. listening to audio-tapes, Fieldwork, etc.)	178	4.8
TOTAL	3650	99.7

Table 11. Time spent on learning activities. (DIARY)

A number of other questionnaire items were pertinant to the question, "What do students do during their study-time?" Item 11 asked students whether they read the set texts. (Table 12).

Response	No. of Students	% of Responses
• Yes always	78	59.5
• Usually	45	34.3
• Sometimes	4	3.0
• Seldom	3	2.3
• Never	1	0.8
•Did not respond	4	-
• TOTAL	135	99.9

Table 12. Do you read the set texts for each subject?

It was disturbing to find that only 60% of students always read the set texts and that 6% didn't even read their texts "usually". What is abundantly clear from this sample of students is that failure to read the set text has rarely on its own resulted in failure. Of the few students who failed subjects, only one admitted to only reading his texts "usually".

Perhaps the message from item 11 is for lecturers to think more carefully about whether a set text is really necessary. Obviously not all students are convinced of the text book's necessity and in many cases manage to pass their subjects without them.

Practically every external subject produced by RMIHE is accompanied by a Book of Readings. These readings are especially selected by the author to provide important supplementary material to the set text. Usually the readings are integrated into the learning package so that students are advised as they go through their notes when they should read certain additional readings. Normally lecturers consider the Book of Readings to be essential reading.

Item 12 asked students to what extent they used their "Books of Readings" (Table 13).

Responses	No. of Students	% of Respondents
• Read everything	54	41.9
• Read most readings	56	43.4
• Read about half the readings	13	10.0
• Read about a quarter of the readings.	6	4.7
• Read very few or none of the readings.	0	-
• Did not respond.	6	-
TOTAL	135	100.0

Table 13. To what extent do students use their "Books of Readings"?

These findings lend some support to the commonly accepted notion that adult tertiary students are selective about which readings they study. Only 41.9% read everything they were given, 43.4% of students read most, but not all their readings, while 14.7% read about half or less. Unfortunately there is no way of finding out from this data why students were so selective.

Whatever the reasons, lecturers need to appreciate that external students are discriminating readers and care needs to be taken in selecting only those readings that meet a pre-determined set of criteria.

Item 13 asked the extent to which students spent time reading additional recommended readings. Whereas it is assumed students read the set text(s) and the special "Books of Readings", additional recommended readings are not considered essential. Table 14 shows the extent to which RMIHE students used the readings recommended to them.

Responses	No. of Students	% of Respondents
• Read most or all of them	15	11.4
• Read about half of them	17	13.0
• Read a few only	61	46.5
• Read one very occasionally or not at all	38	29.0
• Did not respond	4	-
TOTAL	135	99.9

Table 14. Student Use of Recommended Readings.

The results are not unexpected. Only a small number (11.4%) have the time and/or inclination to read most or all the recommended readings while 13% claim to read about half. The great majority (75.5%) read few, if any. Although it may be disappointing to find that three quarters of the students seldom concern themselves with the recommended readings, it is nonetheless most important that the 24.4% of students who do, should be given the opportunity to expand their knowledge in related areas. All subjects should include carefully selected recommended readings.

Self-assessment questions (S.A.Q.s) are considered an important component of study materials at RMIHE. But, are students convinced of their value? How many students actually complete S.A.Q.s? How do they go about the task? How much time do they spend on these activities? (Table 15).

Responses	No. of Students	% of Responses
• Exactly as the activity was written with a full written response.	17	13.0
• Make rough notes on the activity.	73	55.7
• Perform them "mentally" only.	29	22.1
• Read them through but do not attempt them.	6	4.6
• Don't bother about them at all.	6	4.6
• Did not respond.	4	-
TOTAL	135	100.0

Table 15. How do students respond to S.A.Q.s?

It is heartening to see that over 90% of students (rows 1-3) use the S.A.Q.'s. This in itself is a clear indication that students find them helpful. Furthermore, 68.7% of students actually put pen to paper and make notes or a full written response. Overall this is a most satisfying result if, as we assume, completion of S.A.Q.s aids the learning process.

Item 15 was designed to find out what emphasis students placed on their examination preparation. In interpreting the results (table 16) it should be remembered that students have very different examination demands made upon them according to the subjects they are studying. Some subjects have no examination, others are open book or open question. In some subjects the final examination may count for only 25%, whereas it may be as high as 70% in others. Some students may have to prepare for only one examination, others as many as five. At best, item 15 can, it seems only provide a very crude estimate of the emphasis students give to examinations.

Responses	No. of Students	% of Responses
• Work hard for approximately two weeks before the examinations are due preparing specifically for the event.	68	56.2
• Work hard for approximately one week before the examinations are due preparing specifically for the event.	36	29.7
• Work hard for a day or two before the examinations are due preparing specifically for the event.	14	11.6
• Do virtually no preparation for examinations at all.	3	2.5
• Did not respond or never have examinations.	14	-
TOTAL	135	100.0

Table 16. The emphasis usually placed by students on preparation for examinations.

Normal semester length is sixteen weeks. According to the above result 56.2% of students spend an eighth of this time (two weeks) working hard to prepare for their final examination while another 29.7% spend approximately 1/16 of their semester in preparation. It is a pity students were not offered another category: "Work hard for more than two weeks...." since it is conceivable that some students spend longer than two weeks in preparation.

Obviously, as table 16 shows, most students have to take their examinations seriously whether they like it or not. If studying externally is about making people better qualified to do things then we must be constantly asking ourselves whether examinations do much to achieve this. Is studying for an examination for one, two or even more weeks each semester necessarily the best use of students time? Are there other learning activities that are as, or more effective but far less costly to organise? Educators should constantly re-assess their position with regard to the use of examinations. It is the writer's belief that too many lecturers continue with examinations for purely historical reasons and have not seriously considered other alternatives. It is as though some lecturers feel that because they had to suffer examinations they must inflict the same upon their students. There are even some students who don't feel they have achieved anything if they haven't endured a final examination!

CONCLUSIONS

The introduction to this report outlined the major hypothesis and the three sub-hypotheses to be tested. The data presented has

refuted sub-hypotheses one and two while sub-hypothesis three remains unresolved. Clearly there is a mis-match between workload expectations of the institution and the expectations of the majority of students and between the advice given to students about study timetabling and what students do in practice. Sub-hypothesis three, which relates to the emphasis students give to various learning tasks, remains unresolved due to insufficient valid data. Since two of the three sub-hypotheses that make up the major hypothesis are clearly rejected it is fair to say that the major hypothesis should also be rejected although perhaps not totally. It can be said, therefore that at RMIHE there exists a significant difference between the institution's expectation of external student approaches to learning and the approaches to learning external students report using.

Having come to this conclusion what are the implications? It would seem safe to argue that it is educationally to the betterment of all concerned if the teachers and learners are as closely in accord as possible about every facet of the educational process. Students and staff should agree what each course entails and what tasks must be completed for satisfactory completion. In addition to this understanding between students and staff, there must be a consistency across the whole gamut of courses. Often the workloads for two courses with similar credit points turn out to be very different. More care should be taken to see that courses earning the same number of credit points involve students in equitable workloads. Of course every student has different strengths, attributes and pre-knowledge so that it would never be possible to regulate workloads precisely. However, much can be achieved if lecturers and instructional designers insist that new courses go through a proper developmental testing stage. Using such a procedure it is possible to plan the weekly workload more precisely. One of the best exponents of this is the Open University in the United Kingdom which has been able to actually quantify the time the average students will need to study a reading, or complete in-text questions or listen to an audio-tape. So, the call is for developmental testing of new courses, far greater attention to consistent workloads between courses and more stringent planning of learning tasks on a week by week basis.

With regard to the advice that RMIHE (and all other tertiary institutions known to the writer) gives to its students about timetabling study sessions the data presented in this paper suggests that a well organised daily routine approach to study is certainly not the only effective way to achieve good results. Indeed, the majority of students surveyed did <u>not</u> observe a strict timetable at all yet managed quite successfully. One of the great advantages of studying at a distance is surely the flexibility it allows. Whereas following a strict daily timetable may be the best method for some students the great majority appreciate the opportunity to be flexible. In this way they can plan on a weekly or even daily basis when they can find a couple of quiet hours for study. The emphasis when advising students how to plan a study timetable should therefore be on encouraging students to be tenacious, to maintain a sufficient

number of hours of study each and every week at whatever time they find most convenient. Few students live a routine life into which a study routine fits snugly but all students need to find a certain number of hours for study throughout the week. So it is important to persuade students of the need to maintain the necessary number of hours of study each week. This of course is easier done if the course has been through a rigorous developmental testing process and times for the various tasks have been allotted.

Finally, it would be interesting to know to what extent other tertiary institutions have a mis-match between student and institutional expectations about approaches to learning. This writer would venture to say that few, if any, institutions have yet achieved "the perfect match" but that the closer the student body and the institution are in accord the greater the educational benefits for all concerned.

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Teleconferencing at Riverina-Murray Institute -
Evaluation of a Pilot Study.

The Context and Setting

The Associate Diploma in Park Management was first offered externally by Riverina-Murray Institute in 1981 to provide specifically for the education and training of the New South Wales National Parks and Wildlife Service field managers and staff. The target population has since been expanded to include staff of N.P.W.S. residing anywhere in Australia and others who have no direct connection with the N.P.W.S.

114 new students enrolled in the Associate Diploma in Park Management at the start of 1984. By July, 64 of these had withdrawn, leaving only 50 to continue their studies into the Spring Semester 1984. The possible causes of this high attrition rate (approx. 60%) were investigated by the writer during July and August 1984. One of the factors that contributed to withdrawal, according to a number of students who responded to a questionnaire, was "isolation". Most students were rangers or assistant rangers located in often inaccessible parts of Australia, working unpredictable hours and experiencing difficulties identifying with the Institute and the learning materials that emanated from its ivory towers. In an attempt to help overcome the expressed feelings of isolation and perhaps lessen the attrition rate, it was recommended to the External Studies Committee that teleconferencing be introduced in 1985. Reaction to this proposal was at first skeptical but as a result of persistance it was agreed that a pilot teleconferencing project with a ceiling of $500.00 be conducted during week three of Autumn Semester, 1985.

The Riverina-Murray Institute has not attempted teleconferencing before. The External Studies Committee in accepting the proposal requested, therefore, that it be evaluated fully and the results reported at the conclusion of the pilot scheme. Hence this evaluation paper

Evaluation Personnel

The writer, as the evaluator, was closely associated with every aspect of this project. As such, he is open to all the usual criticisms of being a biased observer, too subjective, unable to distance himself from the project and furthering his own interests. It is pointless for the writer to deny that these factors may have influenced his judgement.

On the other hand, being so closely identified with the project did have some distinct advantages. The evaluator had a reasonable understanding of the type of student for whom the teleconferences were being organised. He was also aware of the organisational problems experienced and, as the educational development officer, the study materials forwarded to students. The writer also knew the lecturers involved and took the responsibility for preparing them in teleconference protocol and teaching strategies. Furthermore, the writer was aware of the bureaucratic systems operating within the institution. This understanding of the total context in which the evaluation was to occur and personal involvement with the project enabled the evaluator to practice a degree of self-evaluation along the lines of the self-reflection model proposed by Stephen Kemmis. (Kemmis 1980).

Purposes of the Evaluation

It is hoped that this evaluation will provide some answers to the following:

* To what extent does teleconferencing help external students?

* How expensive is teleconferencing?

* To what extent, if any, can teleconferencing be seen to increase retention rates?

* How easy is teleconferencing as a two-way communication system?

* To what extent does teleconferencing reduce student feelings of isolation?

* Do the students and/or lecturers believe teleconferencing is sufficiently worthwhile to merit continuing teleconferencing in future?

* Do the benefits justify the cost?

Evaluation of this project will also enable the Division of External Studies to better service academic staff who may have an interest in this medium. Major providers of distance education should demonstrate they have at least experimented (and evaluated) with new forms of technology.

Major Issue

Having listed the purposes of this evaluation it becomes clear that the major issue is whether teleconferencing is worthwhile. To determine this we must weigh the costs (money, time, effort) against the benefits (less isolation, motivation to continue etc.). It is the classic decision-maker's nightmare; how to equate quantitative data (costs) with qualitative data (benefits).

Economic Constraints

It was quickly realised that with 120 new students enrolling in the program in 1985, increased Telecom charges and a ceiling of $500.00 for the total project that only some students could be included in this pilot study. It was decided therefore, that students residing in Victoria, New South Wales, Queensland and the Australian Capital Territory should be excluded from the project on account of the fact that generally speaking they were less geographically isolated and distanced from Albury than their colleagues in Tasmania, South Australia, Western Australia and the Northern Territory. Accordingly, invitations were forwarded only to the 38 students living in the more isolated states to take part in the teleconferencing sessions which were to be approximately half an hour in duration.

Responses to the invitations are shown in table 1.

Table 1. Responses to Invitations to participate in Teleconferences.

State/Territory	Invitations Sent	Acceptances	Acceptances that arrived too late	No Reply
Northern Territory	15	9	1	5
Tasmania	16	12	1	3
South Australia	5	3	0	2
Western Australia	2	0	1	1
Totals	38	24	3	11

A number of students did not respond or responded too late because they were enrolled late. Once again the Institute's policy of accepting new students very late caused problems.

Telecom charges for teleconferencing in March 1985 were $10.00 for a connecting fee for each teleconference plus the normal STD cost for every student involved. Using Telecom's "STD Rates over Distance" chart it was possible to estimate the expenses in advance. It was decided therefore, to hold four conferences with six students and a lecturer participating in each. Expenses were as follows:

4 Conferences with $10 connecting fee for each	$40.00
24 STD phone calls for 30 minutes (each at 35.55 cents per minute)*	$255.96
Estimated Total:	$295.96

*This is the economy rate (i.e. after 9.00 p.m.) for distances in excess of 745 km.

Teleconferencing Procedure

Conducting teleconferences requires considerable planning and organisation. The timetable of events below is indicative of this.

Timetable of Events

PRE-TELECONFERENCE	October/ November 1984	*Detailed planning of the project.
	Dec. 1984/ Jan. 1985	*Initial contacts with Telecom Australia and preliminary discussions with 2 lecturers involved.
	February 1985	*Computer listing of new enrolments for 1985 Park Management Program obtained.
	February 1985	*In consultation with lecturers, students divided into groups of 6 according to agreed criteria, e.g. geographic distribution, time zones, occupation. *Lecturers identify suggested topics. *Students contacted by letter informing them of time of teleconference, possible topics for discussion, how to prepare for teleconference, protocol, and requesting they return form A. (See Appendices B & C). *Questionnaire sent to all students. **
	March 1985	*Arrangements with Telecom Australia finalised.
	March 1 - 16 1985	*Lecturers complete sessions on teleconference protocol and teaching techniques (Appendix D). *Teleconference groups restructured where necessary and students advised of precise times and topics to be discussed.
	March 18 - 21	*Both lecturers conduct 2 teleconferencing sessions during the week after 9.00 p.m. *Lecturers maintain diaries (Appendix A) ** *Sessions recorded on audio-tape.** *Lecturers interviewed to obtain overview impressions at conclusion of last session.**

Timetable of Events (cont'd)

POST-TELECONFERENCE	March/April 1985	*Audio-tapes analysed.** *Questionnaires returned and analysed.**
	May 1985	*First draft of evaluation report completed and given to lecturers for comment and alteration if necessary.**
	June 1985	*Final evaluation report completed.**

** Normally teleconferences are not subjected to the intense evaluation procedures listed in this time-table. Although evaluative procedures should be continued as a matter of course, the events marked with astirisksare not usually formalised.

Information Gathering Techniques

Six procedures for gathering data were planned. Procedure 5 never eventuated due to circumstances beyond the control of the writer. Procedures four and six were limited in that much of the data requested was not forthcoming. The six procedures were as follows:

Procedure 1 - OBSERVATION

The evaluator noted the effectiveness of liaison with, and assistance received from, Telecom Australia.

Procedure 2 - LECTURER DIARIES

Lecturers were asked to complete short structured diaries for each teleconference. (See Appendix A).

Procedure 3 - LECTURER INTERVIEW

An unstructured interview was conducted with lecturers the day after each teleconference. The purpose of these interviews was to obtain overall impressions of the success or otherwise of the sessions and to ask questions about recordings made in the diaries.

Procedure 4 - STUDENT QUESTIONNAIRE

Questionnaires were sent to students in February 1985 for completion as soon as possible after participating in their teleconference.

Procedure 5 - STUDENT INTERVIEWS

Ten students were to be randomly selected for interview from those attending the residential school in May. (Appendix C). The interviews were to be informal and unstructured in order to obtain genuine reactions.

Procedure 6 - AUDIO-CASSETTE ANALYSIS

Teleconferences were to be recorded and analysed to seek answers to the following:

* How much of the time was the lecturer speaking?
* How much of the time was the student speaking?
* How much did each student contribute to the discussion? (Students were asked to give their name when speaking).
* To what extent was the lecturer successful in encouraging all students to partake?
* Were all the planned topics covered?
* Were there times when the dialogue became "bogged-down" with irrelevancies?
* Were all the planned topics covered?
* Was the lecturer's approach warm, encouraging, relaxed ...?
* Were students given an opportunity to interact at regular intervals?

Data Analysis

Procedure 1 - Observation.

Obviously it was necessary to liaise with Telecom Australia to conduct the teleconferences. This process involved discussions about cost, procedures to be followed, information required and what to do if problems occured. In general Telecom Australia were polite and efficient although they often could not provide answers to my questions immediately. The Albury Office does not have the facilities to make teleconference connections locally so all information had to be relaid to Sydney who then controlled each teleconference link-up.

Procedure Two - Lecturer Diaries.

An example of the lecturer diary is provided as Appendix A. Although students were aware of the times and topics to be discussed five of the 24 students were unavailable when the teleconferences began. (No apologies were received from these five students!). Of the 19 that were successfully connected, one was cut off after 2½ minutes and another about half way through. Neither student was able to return to the conference which must have been infuriating for them. Short of stopping the whole teleconference and making all the connections again, there was nothing that could be done.

Each teleconference was scheduled to start at 9.00 p.m. and continue for approximately half an hour. It was left to the lecturer to actually terminate each session when he saw fit.

Details are tabulated below:

Date	Starting Time	Duration (Minutes)	No. of Students
March 18	9.10 p.m.	40	3
March 19	9.45 p.m.	40	5
March 20	9.05 p.m.	41	6
March 21	9.20 p.m.	30	5
	Totals	151	19

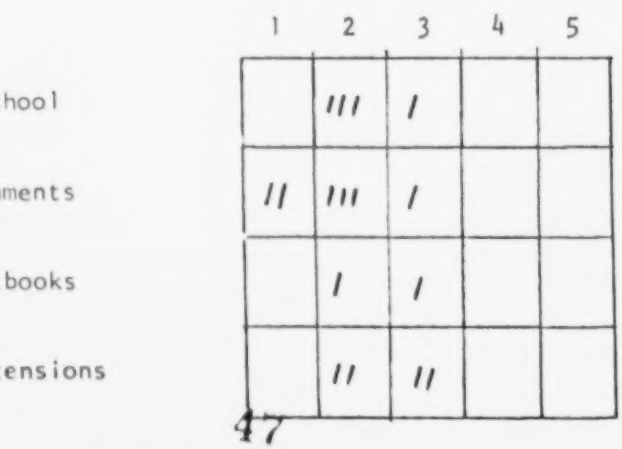
Table 2 - Starting time, duration of teleconferences.

Late starting times are due to the time taken to ring seven numbers and then make the connections. The very late start on March 19 was the result of an earlier link up at 9.05 that was totally unsatisfactory. The lecturer complained and eventually Telecom Australia was able to correct the problem by using ISD rather than STD. Three of the conferences went well overtime but because fewer students were involved than expected the overall costs barely exceeded the estimates. It is suggested that in future an alarm clock or some similar device be used to alert lecturers to the completion of the time limit.

Lecturers reported enormous variance in the quality of sound from "dreadful" to "excellent". Eventually three teleconferences achieved "good" sound while the fourth suffered sound oscillations with excellent quality for a moment or two but then fading away to practically no sound before returning.

At this stage considerable doubt must be expressed regarding the ability of Telecom Australia to consistently provide the quality of sound necessary for such teleconferences. Perhaps the service will improve with the launching of AUSSAT ?

The final question on the lecturer's diary referred to how well they considered the four preselected topics had been covered. The responses are collated below:



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1. Very well; 2 Quite well; 3 Poorly; 4 Very Poorly; 5 Not covered.

Table 3 - How well lecturers perceived their coverage of the four pre-selected topics.

These responses were later followed up in the lecturer interviews.

Lecturer Interviews

The purpose of the unstructured interviews was to obtain an overall impression of the success or otherwise of four teleconferences from the lecturer's point of view.

Generally speaking both lecturers felt the conferences were well worth while, profitable for both students and lecturers. The students appeared to appreciate the interest the College was showing in their problems and the opportunity to share ideas and thoughts with other students. The lecturers found the experience somewhat harrowing to begin with but after having completed two sessions felt that their teleconferencing technique was developing and they became more relaxed. Both were annoyed by the inability of Telecom Australia to ensure good sound throughout and the fact that on two occasions students were cut off without warning.

The lecturers also found the sessions alerted them to the very real problems students face which in the comfortable halls of academic learning can so easily be forgotten. In particular the lecturers remarked about the extreme ignorance many students showed toward approaching tertiary study and what was expected of them. Both were surprised to discover the great difficulties students had been experiencing in purchasing text-books and were able to follow this matter up with the University Cooperative Bookshop.

Student Questionnaire

The Questionnaires were circulated to students at the same time they were invited to participate in the teleconferences. They were asked to forward the completed forms as soon as possible after the completion of their teleconference session. Only seven of the 19 students returned questionnaires - a far from satisfactory response rate. The responses are collated below.

TELECONFERENCE QUESTIONNAIRE

1. The quality of sound was:-

Excellent [ ] Very good [1] Quite good [ ] poor [4] dreadful [2]

2. The link-up (30 minutes approx.) was:-

Too long [ ] Just right [6] Not long enough [1]

3. The session was:-

Very helpful [1] Helpful [2] Some help [4] A waste of time [ ]

4. This pilot session linked a lecturer and [X] students. Was this:-

Too many people [ ] Just right [6] Too few [1]

5. If you had the opportunity to join a teleconferencing session once each semester at what point would you chose to hold the session?

Mid-semester (3) After 1st assignment sent (2) This time (1) No comment (1)

6. What suggestions can you offer regarding the best time, day of the week etc. to hold teleconferencing sessions?

This time was fine (5) Avoid Mon / Fri nights because some rangers work 10 days on x 4 days off (1) A bit earlier - 8.00 pm (1)

7. How well did the lecturer manage the session?

Very well [5] Adequately [2] Poorly [ ]

8. How could the lecturer have been more effective in running the session?

Speak louder (1) Run as a subject tutorial (1) Involve people more (1) Lecturer was excellent (1) No comment (3)

9. What advice should be given to students who participate in these sessions?

Just right as is (1) Talk more (1) Prepare better beforehand (2) No comment (3)

10. Please add any other comment not covered by the above items that might be helpful

Add more topics eg. workload, subject selection (1) Include students from all states (2) Use as a tutorial (1) Get students to discuss their problems more (1) No comment (2)

Your name ..... (optional)

Thank you for your co-operation in this venture. I plan to produce a short report on this pilot experiment and will be sending you a copy in due course.

David Roberts

David Roberts,
Division of External Studies.

BEST COPY AVAILABLE

Student Interviews

Since the writer was unable to attend the Residential Schools in person no interviews were conducted.

Audio-Cassette Analysis

Each teleconference could be recorded quite simply by using an attachment (cost $2.99) that was affixed to the telephone and then plugged into the cassette player. Students had been asked to sign an agreement that they were prepared to have their session taped for purposes of analysis. Unfortunately only one teleconference was in fact recorded. On one occasion the lecturer forgot to turn the machine on, on another occasion a stereophonic pick-up was used instead of the cassette recorder supplied. It is not known why the third tape did not record successfully.

The session which was successfully recorded has been carefully listened to and analysed with regard to the lecturer's technique in conducting the teleconference. Of course, it is not always necessary to record teleconference sessions but such a procedure does offer a number of advantages.

* Sessions can be recorded and sent back to those who took part in the teleconference as a "follow-up".

* Sessions can be forwarded to interested students who were unable to participate.

* Recordings allow the lecturer to analyse his/her own performance.

* Recordings allow others to assist in evaluating the lecturer's performance if requested to do so.

* Lecturers can refer back to teleconferences later if necessary.

Conclusions

Despite the fact that some of the data gathering processes did not eventuate the way they were planned, it is nevertheless possible to draw some conclusions. In drawing these conclusions reference is made to the purposes of this evaluation as listed on page two.

To what extent does teleconferencing help external students?

Item 3 of the student questionnaire is a clear indication that the students found the teleconferences helpful.

Very helpful	1 student
Helpful	2 students
Some help	4 students

How expensive is teleconferencing?

The total cost of the four teleconferences was $303.02. Breaking this down it is possible to develop some simple rules-of-thumb which are perhaps more meaningful ways of looking at cost.

How expensive is teleconferencing? (cont'd)

Based on March 1985 prices (i.e. $10 per Teleconference plus 35.55 cents/student/minute) we can say that :

* A half-hour teleconference with six students will cost approximately $75.00 or $2.50 per minute.

* It costs approximately $12.30 per student for a half-hour teleconference.

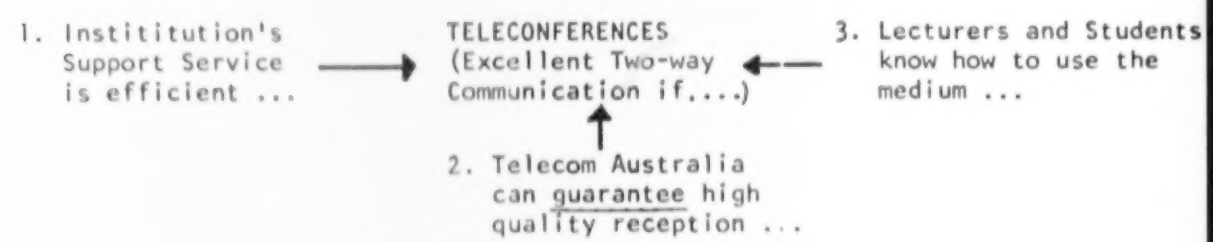
To what extent, if any, can teleconferencing be seen to increase retention rates?

This is impossible to answer after only one pilot study. Even if all the students involved in the teleconference continued their courses to completion it would not be possible to claim that such a success rate had anything to do with having participated in a single teleconference. There are too many other variables involved. The best that can be claimed is that the teleconferences helped solve some problems for some students at this early stage in their studies.

How easy is teleconferencing as a two-way communication system?

Provided the Institution's support service is efficient, Telecom Australia improves its technology and the lecturers and students understand the medium, teleconferencing has enormous potential as a two-way communication system. The effectiveness of the medium is seriously curtailed however if one or more of the three major components are in any degree deficient.

Figure 1 - The three components of Effective Teleconferencing


1. Instititution's Support Service is efficient ...
TELECONFERENCES (Excellent Two-way Communication if....)
3. Lecturers and Students know how to use the medium ...
2. Telecom Australia can guarantee high quality reception ...

Components 1 and 3 (Figure 1) deserve some elaboration. A number of important organisational steps need to be taken prior to the starting of any teleconferences. These are listed below-

Step 1. Procure computer print-out (and address labels) for all students participating.

Step 2. Write to each student outlining what is involved, suggesting discussion topics and checking telephone numbers. (Appendix B).

Step 3. Collate student replies. Draw up teleconference groupings of approximately 6 students per session. (Appendix E).

Step 4. Notify students of precise dates, times and the topics to be discussed. (Appendix F).

Step 5. Inform Telecom Australia of dates, times, names of students and telephone numbers. (Appendix E).

Step 6. Inform Lecturers of dates, times, names of students, telephone numbers and topics for discussion.

It is also necessary to liaise with lecturing staff at every step.

The third component requires lecturers and students to know how to obtain optimum value from the use of this medium. Students were advised about teleconferencing protocol when first contacted. (Appendix B). A short workshop was also held with the two lecturers in order to outline basic strategies and teleconferencing techniques. (Appendix D).

Although setting up this pilot study involved considerable secretarial-type duties it would be possible to design standard format letters and forms to cover all teleconferences thus substantially reducing the paper work.

To what extent does teleconferencing reduce student feelings of isolation?

Again, only a general statement can be offered here. Any attempt by the Institution to set up two-way communication with students must be beneficial and help reduce feelings of isolation. Teleconferencing is very valuable in this regard since it puts students in contact with both lecturers and fellow students. The sense of isolation is particularly strong for newly enrolled students who may never have visited, or met, or even spoken to a person from the Institution since enrolment. For many, living hundreds of kilometres away, teleconferencing may be the only two-way communication that occurs until they attend residential schools apart from perhaps an attempted phone call. It is also significant that students see teleconferencing as an expression of concern. The Institution, through its initiative, is pursuing an interventionist policy and not just reacting to pleas for help if and when they come from students.

Do the students and/or lecturers believe teleconferencing is sufficiently worthwhile to merit continuing in future?

The simple answer to this is YES. Everybody concerned believes the teleconferences are worth continuing in the future provided that:

* Telecom Australia improves reception.
* Teleconferences are properly administered.
* Lecturers are well prepared.
* Students are well prepared.
* Teleconferences are limited in number and duration (too costly).

Do the Benefits justify the Costs?

It is easy to measure the costs in money, less easy to measure the cost in time and effort (mostly on the part of the organiser) and almost impossible to determine whether the benefits justify the cost.

The author is convinced that the Institute does not do nearly enough to foster two-way communication. The attitude still prevails that external students are a useful way of topping up EFTS and that external students can be serviced "on-the-cheap". This is probably the penalty this institution pays, along with many other tertiary institutions in Australia, for trying to work a dual system of internal and external students. It appears that the external student in some respects is regarded as a second class student often out of sight and out of mind. Any attempt by the institution to redress this imbalance and establish two-way communication systems with isolated external students should be encouraged. There is no doubt that teleconferencing benefits the students although it is not possible to quantify this.

Recommendations

1. Teleconferencing as a medium be used very sparingly because of its high cost and the amount of organisation that is required beforehand.

2. Teleconferencing be conducted only by lecturing staff and D.O.'s who can convince the Head, External Studies of the necessity and expected value of using such a medium.

3. The Head of External Studies (or his appointee) should consider the following matters in approving teleconferences:

   * Is the lecturer's D.O. able and prepared to assist in the organisation of the teleconference(s)?

   * Has the lecturer discussed (or already experienced) the need for pre-structuring teleconferences and observing certain protocol? In other words, does he/she understand the medium?

   * Are the students to be contacted as a group who will benefit from joint discussions? For example, are they very isolated or all working on a combined project?

   * Is the teleconference planned for the most opportune time in the semester?

   * Will students who cannot, or do not wish to take part in a tele-conference be disadvantaged?

4. The Institution contact Telecom Australia to inform them of the deficiencies in the system to date and keep in touch with any technological advances (satellite?) that will provide better service in future.

5. A pilot study be conducted by the writer and the two lecturers already experienced in teleconferencing using the telephone on a one-to-one basis with isolated students (telephone tutorial). Ideally this should be done with the 19 students who participated in the teleconferences in March.

5. (cont'd)

Such telephone contact, properly planned, may be more value to students since the 30 minutes can be devoted solely to their individual concerns. Such calls are no more expensive than teleconferences (slightly cheaper in fact). The disadvantage of teletutorials is that there is no opportunity for a number of students to share and discuss ideas together. On the other hand teletutorials can eliminate a lot of "wasted" time if a topic is being discussed that is of little or no interest to some of the participants. A pilot study using the same lecturers and students would enable some sort of a comparison of the two media to be made.

6. A booklet be prepared by the writer on "Conducting Teleconferences" for circulation among the staff of external studies. (Revised copies may be disseminated more widely in future if required).

7. A set of standard letters and forms be prepared in order to reduce the organisational time involved in preparation for future teleconferences.

8. D.O.'s be encouraged to identify lecturers and subjects where teleconferencing would appear to be advantageous with a view to experiencing the process themselves.

9. That an amount of $1000.00 be budgetted for 1986 to be used in further development of teleconferences and testing of teletutorials.

David Roberts
May, 1985.

Group _____ Date _____ Scheduled Time _____

Participating Students	Present (√)	Location
1 _____		_____
2 _____		_____
3 _____		_____
4 _____		_____
5 _____		_____
6 _____		_____
7 _____		_____

Actual start time _____

Actual finishing time _____

Length of teleconference _____ minutes.

A) Clarity of Sound

Excellent	
Good	
Satisfactory	
Poor	
Dreadful	

B) Topics. How well were they covered?

	1	2	3	4	5
Topic 1 Residential Schools					
Topic 2 Writing Assignments					
Topic 3 Getting hold of text books					
Topic 4 Asking for extensions					

1 Very well; 2 Quite well; 3 Poorly; 4 Very Poorly; 5 Not.

C) Record here any matter that may be of help. You may wish to mention protocol, preparedness of students etc.

_____

_____

Appendix B. A Suggested Introductory Letter to Students.

February 25th, 1985.

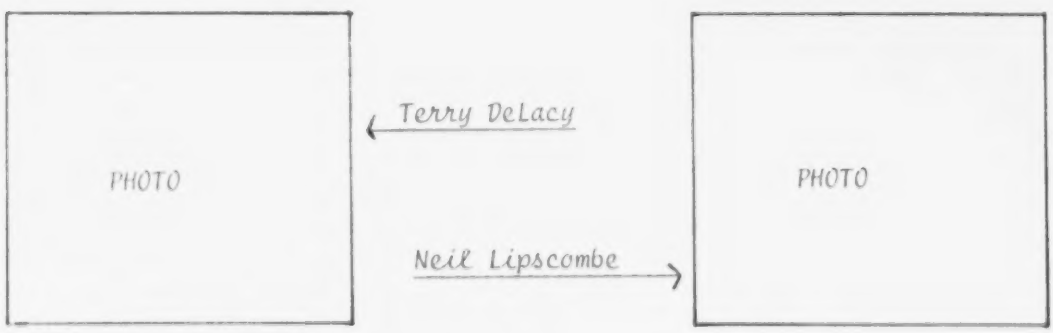
Dear Student,

Welcome to the Associate Diploma in Park Management. By now you should have received all your materials for your first semester and perhaps have found it all rather overwhelming? Suddenly - there are books to read, notes to be studied and assignments to be submitted on top of the one hundred and one things that a normal life entails!

We at the college are very aware of the traumas of starting off as an external student especially if this is after a number of years away from formal study. Please don't be too put off - remember countless thousands of students before you have suffered the same doubts, yet, the majority survive and graduate.

On page 33 of your Course Handbook you will have read about our intention to try to contact you early in the semester by teleconferencing. Well, this is what this letter is about. We hope that by linking you up with your lecturer for 20 - 30 minutes you will feel less isolated, realise that other students share your problems, identify more with your lecturer and have some useful and informative discussion. Considerable organisation is involved in setting up teleconferences and there are a few important matters of "protocol" that you should be aware of. Please read what follows carefully and return FORM A by RETURN POST if you would like to take part. If we have not heard from you by March 8th we will assume you do not wish to take part.

First of all, meet your lecturers: -



At least, now, you will be able to put a face to one of the voices you will hear on your teleconference.

Either Terry, or Neil will chair your teleconference session at (TIME) P.M. (TIME ZONE) on (DATE). Be ready about fifteen minutes before the allotted time for a "stand-by" call from Telecom Australia. Make sure you are in a room where you can be quiet and undisturbed for about 45 minutes. Have a paper and pencil and subject materials on the desk in front of you.

Terry and Neil have tentatively identified the following topics for discussion because they believe they are of general concern to every student. Please indicate on form A

TOPIC 1 Residential Schools

TOPIC 2 Writing Assignments

TOPIC 3 Acquiring textbooks

TOPIC 4 Requesting extensions

whether you are happy about the choice of topics or whether there are others you might like discussed. If there is time, we will do our best to include your topic(s). In the meantime think carefully about any questions you would like to raise in relation to topics 1 - 4 above.

We would ask you to observe three matters of protocol that will make your teleconference more beneficial:-

. Allow Terry or Neil, as chairman, to control who speaks and for how long,

. Don't talk for too long - remember there are as many as seven other people taking part,

. When you speak always give your name first so everyone knows who is talking.

When you have finished your teleconference we would like you to tell us what you thought about it. A short and easy to complete questionnaire is enclosed for you to use. Please send the questionnaire back as soon as possible after the teleconference. This will help us to evaluate how effective the teleconference was and to improve matters for the next group of students. We may also ask you at the Residential School in May to tell us more about your reactions to teleconferencing.

Please be assured that complete confidentiality will be observed with regard to any comments you give us either in the questionnaire or at Residential School.

If you wish to take part, kindly complete Form A (enclosed) and forward it AS SOON AS POSSIBLE to:-

David Roberts,
Educational Development Officer,
Murray Campus,
P.O. Box 789,
ALBURY. NSW 2640

Thank you for reading this. I hope the teleconference proves a success.

Yours sincerely,

David Roberts,
(Educational Development Officer,
Murray Campus).

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Appendix C Student Form A

Given Names _____ Surname _____ ____

Name to be used in teleconference _____

Telephone number for teleconference _____ (STD) _____

Do you agree that the topics will be useful?

Topic 1 Residential Schools Yes/No

Topic 2 Writing Assignments Yes/No

Topic 3 Acquiring textbooks Yes/No

Topic 4 Requesting Extensions Yes/No

Are there other topics you would like discussed? List

_____

_____

* Will you cooperate in returning the questionnaire? Yes/No

* Do you have any objections to being interviewed about your impressions of teleconferencing when you attend Residential School? Yes/No

* Do you have any objections to you teleconference being recorded for purposes of analysis? Yes/No

* Once again let me assure you that no names will be used in any evaluation and that any comments you care to make will be treated with utmost confidentiality.

Please RETURN this form by RETURN MAIL.

Thank you.

Appendix D. Pre-teleconference session for Lecturers.

An informal discussion session will be used to suggest the lecturers follow these guidelines:-

- Arrive fifteen minutes early
- Check you have diary and list of students and their locations for introductions
- Have paper and pencil ready, together with subject materials
- Check audio-tape is ready to start
- Use the recommended format (Grimwade, J. 1984)

(i)	Welcome		
(ii)	Call the roll - Introductions	Occupation Where they live A major interest	3 mins.
(iii)	Administrative details		
(iv)	Topic 1 - Res Schools Interaction		
	Topic 2 - Writing Assignments Interaction		
	Topic 3 - Getting hold of text books Interaction		
	Topic 4 - Asking for extensions Interaction		26½ mins.
(v)	Other topics if time		
(vi)	Conclusion		30 seconds

- Understand your medium - aural only, therefore you miss all the non-verbal cues - you cannot see who is speaking or wants to speak. Must modify your approach to invite individuals to contribute
- Be thoroughly prepared - adhere strictly to planned timetable
- Control who speaks and for how long
- Ensure speakers always give their names each time they start speaking
- Avoid getting "bogged-down" on irrelevancies
- "Humanise" the whole process. Be warm, encouraging, relaxed, cheerful, positive, etc.
- Allow students regular interactive times. Above all avoid sessions becoming lecturer dominated.
- Watch out for when to finish (i.e. 30 minutes)
- Please complete DIARY immediately after the session
- Return cassette/tapes/telephone pick up next day so that next person has gear.

David Roberts
15.3.1985

Appendix F

Riverina College of Advanced Education

A regional college serving Wagga Wagga, Albury-Wodonga, Goulburn and Griffith, and elsewhere by external studies

Albury-Wodonga Campus:
PO Box 789
Albury
New South Wales 2640
Australia
Telephone (060) 230 833

6 March 1985

Dear Student

Thank you for replying to the letter concerning teleconferencing. The following details are now confirmed:

Your Chairperson will be:

Terry DeLacy
Harvey Mendham

The date of your teleconference will be:

Monday 18 March
Tuesday 19 March
Wednesday 20 March
Thursday 21 March

The time for your teleconference YOUR LOCAL TIME will be:

Western Australia	7.00 p.m.
South Australia	8.30 p.m.
Northern Territory	8.30 p.m.
Tasmania	9.00 p.m.

Topics for discussion will be as indicated in your first letter i.e.

Residential Schools
Writing Assignments
Getting hold of text books
Asking for extensions

Please ensure that you are ready about ten minutes before the specified time in case Telecom wishes to check your availability.

Your conference will be recorded (everybody agreed).

Please forward your completed questionnaire as soon as possible after your conference to:

David Roberts
Education Development Officer
P.O.Box 789
ALBURY NSW 2640

Hope the conference proves a success.

Yours sincerely

David Roberts 60

David Roberts (EDO Murray Campus)

A CALL FOR PAPERS....

Occasional Papers Number 6 is timetabled to appear circa April 1986.

RMIHE staff are requested to submit a copy of any material for publication in the next edition no later than Friday 13 December 1985.

Please forward papers to:

David Roberts
Editor
Occasional Papers
Riverina-Murray Institute of Higher Education
Murray Campus
PO Box 789
ALBURY NSW 2640